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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/587,531

07/26/2006

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7590
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Huntington, NY 11743

11/15/2007

EXAMINER

DESAI, NAISHADH N

ART UNIT

PAPER NUMBER

2834

MAIL DATE

DELIVERY MODE

11/15/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/587,531	Applicant(s) HEYDER, MARTIN	
	Examiner Naishadh N. Desai	Art Unit 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 7/26/2006 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear to examiner what applicant refers to as "pole pot". It is believed by examiner that applicant means a part of the housing structure which holds the bearing. Applicant is advised to clarify for proper prosecution of case on its merits.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1,2,4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fries (US 5237228) in view of Kweon et al (US 20050184601).

3. As per (original) independent claim 1:

An electric machine (10), in particular for driving functional elements in a motor vehicle, which includes a rotor shaft (12) [Fig 1,1 of Fries] that is rotatably supported in a housing part (16) [Fig 1,4 and 5 of Fries] of a housing via a roller bearing (22, 20) [Fig 1,8 of Fries], an axial spring element (32) [Fig 1,10 of Fries] being located between the roller bearing (22, 20) and a rotor component (34) on the rotor shaft (12), [Fig 1 of Fries] wherein the axial spring element (32) includes an inner ring (40) [Fig 5,31 of Kweon et al] and an outer ring (42) [Fig 5,32 of Kweon et al], which are interconnected in an axially resilient manner [Fig 5,33 of Kweon et al], and the outer ring (42) is connected with the rotor component (34) [Fig 1,2 of Fries].

Fries teaches the use of a spring being attached to a housing and rotor of a motor. Fries does not show the spring to have both inner and outer rings. Kweon et al clearly shows a spring for a motor having both inner and outer rings as part of an axial spring element. It would have been obvious to a person having ordinary skills in the art at the time the invention was made to modify the inner and outer spring elements of FASTERDING et al to be in the shape of continuous circles or rings as disclosed by Kweon et al. The motivation to do so would be that it would allow axial movement of the bearing and reduce vibrations of the motor.

4. As per (original) dependent claim 2:

The electric machine (10) as recited in Claim 1, wherein the inner ring (40) and the outer ring (42) of the spring element (32) are interconnected via resilient segments (44) [Fig 6B of Kweon et al].

5. As per (currently amended) dependent claim 4:

The electric machine (10) as recited in ~~one of the preceding Claims~~ Claim 1, wherein the resilient segments (44) are located in a spiral formation [Fig 6B, 33 of Kweon et al] around the rotor shaft (40) [Fig 1 of Fries] and the inner ring (40) is rotatable relative to outer ring (42), particularly when an axial load is placed on the spring element (32) [abstract of Kweon et al].

6. As per (currently amended) dependent claim 9:

The electric machine (10) as recited in ~~one of the preceding Claims~~ Claim 1, wherein the roller bearing (22, 20) is designed as a floating bearing (22, 20) [Fig 1,8 of Fries] located on the end of the rotor shaft (12), and the rotor shaft (12) is also supported in the housing via at least one fixed bearing [Fig 1,15 of Fries].

Figure 1 of Fries shows both a bearing [element 8] which moves due to the spring [element 10] and a bearing [element 15] which is not moving since it has no spring next to it or attached to it as element 8 does.

Claim 3,5, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fries (US 5237228) and Kweon et al (US 20050184601) in view of Fasterding et al (US 2005/0012417)

7. As per (currently amended) dependent claim 3:

The electric machine (10) as recited in ~~one of the Claims 1 or 2~~, Claim 1, wherein the roller bearing (22, 20) [Fig 1,34 of Fasterding et al] includes an inner part (28) [Fig 1,37 of Fasterding et al], which accommodates the rotor shaft (12) [Fig 1,40], and an outer part (24) supported in the housing part (16)[Fig 1,31 of Fasterding et al]; the inner ring (40) of the spring element (32) bears axially against inner part (28) [Fig 1,25 shows the spring element to bear axially against the inner bearing portion -element 37] and, in particular, not against the outer part (24) - of the roller bearing (22, 20)[Fig 1 of Fasterding et al].

Fries and Kweon et al teach a spring for a motor having both inner and outer rings as part of an axial spring element. Fries and Kweon et al do not show the spring elements

to bear axially against the inner bearing portion. Fasterding et al clearly shows the inner ring of the spring element to bear against the inner race of the bearing. It would have been obvious to a person having ordinary skills in the art at the time the invention was made to modify the device of Fries and Kweon et al to have a spring wherein the inner ring bear against the inner race of the bearing. The motivation to do so would be that it would allow axial movement of the bearing and reduce vibrations of the motor.

8. As per (currently amended) dependent claim 5:

The electric machine (10) as recited in ~~one of the preceding Claims~~ Claim 1, wherein the inner ring (40) [Fig 1, 52 of Fasterding et al] has a larger inner diameter (52) than the outer diameter (54) of the rotor shaft (12) [it is clear from Fig 1 of Fasterding et al that the inner ring would have to have a larger diameter than the shaft in order to fit around the shaft], and the inner ring (40) does not bear against the rotor shaft (12) [Fig 1 of Fasterding et al shows that the inner ring [element 52] does not bear against the rotor shaft].

9. As per (currently amended) dependent claim 8:

The electric machine (10) as recited in ~~one of the preceding Claims~~ Claim 1, wherein the rotor component (34) is designed as an armature lamination core [it is well known in the art to use laminated rotors, therefore it has not been given patentable weight], and the housing part (16) is designed as a pole pot (14) [Fig 1 of Fasterding et al shows the

bearing to be housed in a part of the housing structure resembling applicants "pole pot" design.

10. As per (currently amended) dependent claim 10:

An axial spring element (32), in particular as recited in ~~one of the preceding Claims~~
Claim 1, wherein

the axial spring element (32) includes an inner ring (40) [Fig 1,52 of Fasterding et al] and a concentric outer ring (42) having a larger diameter (47) [Fig 1,55 of Fasterding et al], inner ring (40) and concentric outer ring (42) being interconnected in an axially resilient manner via elastic segments (44) located in a spiral formation [Fig 6B of Kweon et al], and the outer ring (42) includes a reinforcement (48, 50) for fixing the outer ring (42) in position axially on a rotor component (34) [Fig 1,13 of Fries].

Fries et al shows a lock ring [elements 11 and 13] which hold the spring in place.

Claim 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fries (US 5237228) and Kweon et al (US 20050184601) in view of Miller (US 5907199)

11. As per (currently amended) dependent claim 6:

The electric machine (10) as recited in ~~one of the preceding Claims~~ Claim 1, wherein the outer ring (42) includes a radial, circumferential outer wall (46) [Fig 6C of Kweon et al] that forms a press connection (45) with a cylindrical recess (38) in the rotor component (34) [Fig 3,71 of Miller].

Fries and Kweon et al teach a spring for a motor having both inner and outer rings as part of an axial spring element. Fries and Kweon et al do not show the spring elements to outer ring of the spring to form a press connection with a recess in the rotor structure. Miller clearly shows the spring element to bear against a groove / recess in the rotor structure. It would have been obvious to a person having ordinary skills in the art at the time the invention was made to modify the device of Fries and Kweon et al to have a spring wherein the inner ring bear against a recess in the rotor structure as shown by Miller. The motivation to do so would be that it would secure the spring and minimize movement of the spring and also reduce vibrations of the motor.

12. As per (currently amended) dependent claim 7:

The electric machine (10) as recited in ~~one of the preceding Claims~~ Claim 1, wherein the outer ring (42) is fixed in position axially on the rotor component (34) using a detent connection (70), a rear section (66), a bayonet connection, or a material deformation. [Fig 3,71 of Miller clearly shows a detent connection on the rotor structure for the spring [element 70]]

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Simpson teaches an endplay adjustment and bearing decoupling in an electric motor. Morita et al teaches a structure of vibrating compressor. Fischer teaches a dual rate spring for bearing retention. Choi et al teaches a vertical vibrator.

Application/Control Number:
10/587,531
Art Unit: 2834

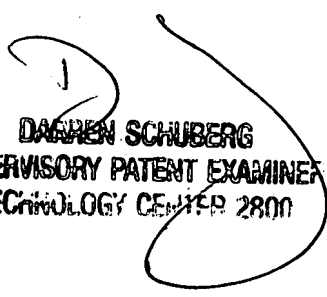
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Naishadh N. Desai whose telephone number is (571) 270-3038. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2204. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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